Pay a$ you Throw ...works for Lincoln

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Rural Montana communities now have the option of using computers and a bar code system to manage their municipal solid waste programs. A pioneer of computerized trash disposal is Lincoln, Montana. Lincoln's problems were common ones: an untended landfill that did not meet EPA requirements, commercial operations paying less than they should have for waste disposal, and several government facilities generating a substantial portion of the community's waste but paying nothing. Annual cost was $30 a year for residential users, $100 for commercial users. The several government operations, including two Montana Department of Transportation facilities, a U.S. Forest Service office complex and campgrounds, and the county shop, paid nothing. The disposal facility consisted of an abandoned gravel pit on state land, for which the community paid $1,000 annual rental.

New EPA Rules Changed Everything

Then, in 1993, everything changed. New EPA rules for waste disposal required Lincoln to close the old dump, which had been in operation for 30 years. The community decided to build an inert waste landfill and container site that would be operated by an outside contractor. A computerized system was developed to assess users of the site for the amount of waste they actually disposed of. The contractor would haul household waste from the container site to a licensed municipal solid waste landfill 70 miles away near Great Falls.

Now going on 5 years of operation, the computerized system is "operating pretty smoothly," according to Scott Western, who staffs the container site. "Everybody seems to accept the system," he said. Residents are responsible for hauling their own waste to the site,

Man with load of trash presents his card for scanning at the Lincoln landfill.

where Western inspects the loads and separates the waste according to type. The site also accepts solid waste collected from the rural area surrounding Lincoln by a commercial hauler. Household waste is placed directly into the 40-yard containers on the site. Yard waste, such as tree limbs and needles, and inert materials such as bricks, rock, dirt, and concrete, are segregated and stored on site. Grass clippings are composted. Unpainted wood and tree limbs are burned in compliance with a burn permit, and the ashes are sent to a laboratory to be tested for toxicity. If they do not exceed toxicity limits, they are mixed with the grass clippings and other compostable materials such as pine needles. The ashes offset the acidity of the needles and hasten composting, according to Laura Nicolai, Administrative Assistant to the Lincoln Refuse District, and computer person, who is instrumental in the operation.

Once a week, the contractor hauls the 40-yard containers from the Lincoln site to the Great Falls landfill. Western

week's accumulation usually fills two of the containers and begins filling a third. Western uses a backhoe to compact the waste into the containers. He said the backhoe reduces volume between 25 and 50 percent. The weight of a filled container is about 8 tons.

Low-cost Hi-tech Solves the Problem

An important element of the computerized system is a "tri-corder," a hand-held device that incorporates a scanner similar to those used at supermarket checkouts. When a load of waste arrives at the container site, Western uses the tri-corder to scan the bar code printed on the laminated card that is held by each user of the site. Bar coding on each card includes the cardholder's name, address, and the property identification number that the county uses for tax assessment. Laura Nicolai is responsible for issuing the cards.

After scanning the card, Western estimates the volume of the waste and punches this number manually into the tri-corder. Later, Nicolai downloads the information stored in the tri-corder into a computer. The amount of waste taken to the site by each card holder is totaled on a yearly basis and the corresponding dollar assessments are forwarded to the county assessor for addition to tax bills. Each card holder is assessed for the amount of waste disposed of during the tax year. Nicolai said 1,130 of the cards had been issued by February 1998. Lincoln has a summer population of about 800, boosted during the summer to about 1,600 by the substantial number of retirees and other seasonal residents.

Residents may dump up to 24 yards for a flat fee of $90. Commercial sources pay according to how much they dump. Sources producing 60 to 72 cubic yards pay $857. Each yard above 73 is $5.00.

Dumping Fees May Drop

Nicolai said the rates may go down in a few years with repayment of the loan that was taken out to finance closure of the old dump and construction and operation of the container site and landfill. About $40 of the $90 fee goes for loan repayment, she said. Loan repayment is scheduled to be completed in 2003. Fifty of the $90 pay for hauling and tipping fees and site operation.

The system relies in the manual estimation of waste volume. Western said he is systematic in his estimates. For example, a conventional garbage can is estimated to hold about .15 yard. A short-bed pickup with the load rising a little above the sides would hold about 2 yards. A long-bed pickup loaded the same way would hold 2.5 yards. Six garbage bags would hold about a yard.

Lincoln landfill attendant, Scott Western, levels off the load in a roll-off container.

White goods and other metals are given a number and stockpiled at the Lincoln facility for recycling.

Laura Nicolai said the estimation system has been remarkably accurate, within about 100 cubic yards per year, equivalent to a 1 percent variation, as shown by the amount of waste actually deposited in the containers. Since implementation of the new system, the amount of municipal solid waste collected has been fairly uniform at about 1,150 tons a year.

One benefit of the system is that it encourages recycling. A rural recycling cooperative placed containers in Lincoln to collect aluminum and steel cans, and newspapers. Independent operators recycle cardboard. The container site accepts appliances (white goods) and other large metal objects which are sold to the contractor. Refrigerators are not accepted unless the Freon is removed first. Recycling of used motor oil is expected to begin in the near future after the operation is relicensed as a transfer station.

Lincoln's System Could Work for Other Communities

The system Lincoln has implemented is one way of dealing with new regulations affecting municipal solid waste in small communities. Many small landfill districts in Montana are looking for ways to keep the lid on their waste management costs. Lincoln's system has allowed officials to measure the amount of waste produced by each user of the landfill/container site, and to charge them according to the amount of waste actually produced.

However, Pay-as-You-Throw (PAYT) systems are not necessarily the solution to all problems. Some PAYT systems are expensive to develop and maintain. The use of a bar-code system and computer makes Lincoln's system easy and convenient to use, besides being efficient.

Nicolai said other small communities could easily adapt Lincoln's system for their own use. The tri-corder, a vital element, can be purchased for about $1,000 from most computer stores, and the taxpayer data base is readily available in every county.

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Any community wanting more information about Lincoln's system can telephone:

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